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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,553	04/26/2001	Joseph P. Odenwalder	010236	9255
23696	7590	12/09/2004	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			RYMAN, DANIEL J	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/843,553

Applicant(s)

ODENWALDER ET AL. *OK*

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/23/01, 8/19/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ref. 632 (see paragraph 1064 and Fig. 6). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: on page 4, line 4 "switch 24" should be "switch 18" to match Fig. 1; on page 4, line 7 "network 18" should be "network 24" to match Fig. 1; and in line 2 of paragraph 1045, "3310a" should be "330a".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7-9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szczutkowski et al. (USPN 4,757,536) in view of Kolze et al. (USPN 6,285,681) in view of Mahany (USPN 6,018,555).

5. Regarding claim 1, Szczutkowski discloses an apparatus in a remote station for decoding a preamble channel (col. 5, lines 21-36), comprising: a preamble detection element (col. 5, lines 21-36), wherein the preamble detection element outputs a potential preamble sequence (col. 5, lines 21-36).

Szczutkowski does not expressly disclose that the preamble channel carries variably sized preamble sequences and that the preamble detection element is a preamble size detection element for determining a number of slots occupied by a preamble sequence on the preamble channel. However, Szczutkowski does disclose that the transmission system is prone to varying channel conditions (fading) (col. 5, lines 21-36). Kolze teaches in a preamble transmission system, using a variably sized preamble sequence (col. 4, lines 58-61) in order to adapt the preamble to varying channel conditions (col. 4, lines 23-43). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the preamble channel carry variably sized preamble sequences and to have the preamble detection element be a preamble size detection element for determining a number of slots occupied by a preamble sequence on the preamble channel in order to adapt the preamble to varying channel conditions.

Szczutkowski in view of Kolze does not expressly disclose that there are a plurality of preamble size detection elements, wherein each of the plurality of preamble size detection elements outputs a best path metric and that there is a selection element for choosing a true

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preamble sequence from the potential preamble sequences output from the plurality of detection elements. Mahany teaches, in a system for preamble detection, using multiple parallel detectors in order to quickly detect a particular type of preamble sequence (col. 9, lines 48-54). Mahany also suggests that a selection element chooses a true preamble sequence from the potential preamble sequences based on signaling from the preamble detectors (col. 2, lines 30-35; col. 9, lines 48-54; and col. 11, lines 54-59). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a plurality of preamble size detection elements, wherein each of the plurality of preamble size detection elements outputs a best path metric and to have a selection element for choosing a true preamble sequence from the potential preamble sequences output from the plurality of detection elements in order to quickly detect a particular type of preamble sequence.

6. Regarding claim 7, referring to claim 1, Szczutkowski in view of Kolze in further view of Mahany suggests that the selection element is further for determining the number of slots occupied by a data subpacket on a non-preamble channel, wherein the number of slots occupied by the data subpacket is associated with the number of slots occupied by the true preamble sequence (Kolze: col. 4, lines 44-57) where the length of the preamble is determined using the length of the non-preamble channel.

7. Regarding claim 8, referring to claim 1, Szczutkowski in view of Kolze in further view of Mahany suggests that the selection element is further for determining the number of slots occupied by a data subpacket on a non-preamble channel, wherein the number of slots occupied by the data subpacket is carried by the true preamble sequence (Kolze: col. 4, lines 44-57) where

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“carried by the true preamble” can be broadly interpreted to include determining the number of slots based off of the length of the preamble.

8. Regarding claims 9 and 14, Szczutkowski discloses a method for and apparatus for determining the preamble information transmitted on a preamble channel, the method comprising the steps of and the apparatus comprising means for: de-interleaving a preamble channel to form a de-interleaved sequence (col. 7, lines 14-28); combining the de-interleaved sequence (col. 6, lines 14-29); decoding the de-interleaved sequence to generate a potential preamble (col. 5, lines 21-36).

Szczutkowski does not expressly disclose that the combining comprises soft-combining; however, Examiner takes official notice that soft-combining is well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to use soft-combining since soft-combining is well known in the art.

Szczutkowski also does not expressly disclose that the preamble channel carries variably sized preamble sequences and that the preamble detection element is a preamble size detection element for determining a number of slots occupied by a preamble sequence on the preamble channel. However, Szczutkowski does disclose that the transmission system is prone to varying channel conditions (fading) (col. 5, lines 21-36). Kolze teaches in a preamble transmission system, using a variably sized preamble sequence (col. 4, lines 58-61) in order to adapt the preamble to varying channel conditions (col. 4, lines 23-43). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the preamble channel carry variably sized preamble sequences and to have the preamble detection element be a preamble

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size detection element for determining a number of slots occupied by a preamble sequence on the preamble channel in order to adapt the preamble to varying channel conditions.

Szczutkowski in view of Kolze does not expressly disclose that there are a plurality of preamble size detection elements, wherein each of the plurality of preamble size detection elements outputs a best path metric and that there is a selection element for choosing a true preamble sequence from the potential preamble sequences output from the plurality of detection elements. Mahany teaches, in a system for preamble detection, using multiple parallel detectors in order to quickly detect a particular type of preamble sequence (col. 9, lines 48-54). Mahany also suggests that a selection element chooses a true preamble sequence from the potential preamble sequences based on signaling from the preamble detectors (col. 2, lines 30-35; col. 9, lines 48-54; and col. 11, lines 54-59). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a plurality of preamble size detection elements, wherein each of the plurality of preamble size detection elements outputs a best path metric and to have a selection element for choosing a true preamble sequence from the potential preamble sequences output from the plurality of detection elements in order to quickly detect a particular type of preamble sequence.

9. Claims 2-6, 10-13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szczutkowski et al. (USPN 4,757,536) in view of Kolze et al. (USPN 6,285,681) in view of Mahany (USPN 6,018,555) in further view of Applicant's Admitted Prior Art.

10. Regarding claim 2, referring to claim 1, Szczutkowski in view of Kolze in further view of Mahany suggests that each of the plurality of detection elements comprises: a de-interleaver for operating over a predetermined number of slots of the preamble channel (Szczutkowski: col. 7,

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lines 14-28), wherein each de-interleaver of the plurality of detection elements operates over a different predetermined number of slots (Szczutkowski: col. 7, lines 14-28 and Kolze: col. 4, lines 58-61); a decoder for extracting preamble information from the preamble sequence (Szczutkowski: col. 5, lines 21-36).

Szczutkowski in view of Kolze in further view of Mahany does not expressly disclose a sequence checker for determining if an identifier is present in the preamble information; however, Szczutkowski in view of Kolze in further view of Mahany does disclose including identifiers in the information stream (Kolze: col. 3, lines 53-59). Applicant teaches as prior art including a variety of fields in a preamble including identifiers (para. 1004). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a sequence checker for determining if an identifier is present in the preamble information since it is well known to include identifiers in preamble sequences.

11. Regarding claim 3, referring to claim 2, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant suggests that at least one of the plurality of detection elements further comprises a combining element operating over at least two slots, wherein the at least one of the plurality of detection elements operates over the at least two slots (Szczutkowski: col. 6, lines 13-29).

12. Regarding claim 4, referring to claim 2, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant does not expressly disclose that the decoder is a convolutional decoder; however, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant discloses a decoder (Szczutkowski: col. 5, lines 21-36; Mahany: col. 9, lines 51-54 and col. 10, lines 41-46; and Applicant: para. 1004). Examiner takes official notice

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that convolutional decoders are well known in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a convolutional decoder since such decoders are well known in the art.

13. Regarding claim 5, referring to claim 2, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant suggests that the identifier is a Medium Access Control (MAC) identifier (Kolze: col. 3, lines 53-59 and Applicant: para. 1004).

14. Regarding claim 6, referring to claim 2, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant suggests that each decoder in the plurality of detection elements outputs a best path metric value and the potential preamble sequence (Mahany: col. 2, lines 30-35; col. 9, lines 48-54; and col. 11, lines 54-59).

15. Regarding claim 10, referring to claim 9, Szczutkowski in view of Kolze in further view of Mahany does not expressly disclose that choosing between the first potential preamble and the second potential preamble comprises: checking for an identifier in the first potential preamble and in the second potential preamble; and selecting either the first potential preamble or the second potential preamble in accordance with the presence of the identifier. Applicant teaches as prior art including a variety of fields in a preamble including identifiers (para. 1004). It is implicit that the device will should only act on information that is destined for the device. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention that choosing between the first potential preamble and the second potential preamble comprises: checking for an identifier in the first potential preamble and in the second potential preamble; and selecting either the first potential preamble or the second potential preamble in accordance

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with the presence of the identifier in order to ensure that the device only acts on information destined for the device.

16. Regarding claim 11, referring to claim 10, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant suggests that selecting either the first potential preamble or the second potential preamble comprises selecting either the first potential preamble or the second potential preamble in accordance with the better of the first metric value or the second metric value if the identifier is present in both the first potential preamble and the second potential preamble (Mahany: col. 2, lines 30-35; col. 9, lines 48-54; and col. 11, lines 54-59).

17. Regarding claim 12, referring to claim 10, Szczutkowski in view of Kolze in further view of Mahany in further view of Applicant suggests that selecting either the first potential preamble or the second potential preamble comprises selecting either the first potential preamble or the second potential preamble in accordance with the better of the first metric value or the second metric value if the identifier is not present in the first potential preamble or in the second potential preamble (Mahany: col. 2, lines 30-35; col. 9, lines 48-54; and col. 11, lines 54-59).

18. Regarding claims 13 and 15, Szczutkowski discloses a method for and apparatus for determining the preamble information carried by a preamble channel, the method comprising the steps of and the apparatus comprising means for: de-interleaving for obtaining de-interleaving results (col. 7, lines 14-28); combining symbols within the de-interleaving results (col. 6, lines 14-29); decoding the de-interleaved symbols (col. 5, lines 21-36).

Szczutkowski does not expressly disclose that the combining comprises soft-combining; however, Examiner takes official notice that soft-combining is well known in the art. It is also implicit that if there is only one preamble code rather than multiple preamble codes, then no

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combining will occur. It would have been obvious to one of ordinary skill in the art at the time of the invention to use soft-combining since soft-combining is well known in the art.

Szczutkowski also does not expressly disclose that the preamble channel carries variably sized preamble sequences and that the preamble detection element is a preamble size detection element for determining a number of slots occupied by a preamble sequence on the preamble channel. However, Szczutkowski does disclose that the transmission system is prone to varying channel conditions (fading) (col. 5, lines 21-36). Kolze teaches in a preamble transmission system, using a variably sized preamble sequence (col. 4, lines 58-61) in order to adapt the preamble to varying channel conditions (col. 4, lines 23-43). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the preamble channel carry variably sized preamble sequences and to have the preamble detection element be a preamble size detection element for determining a number of slots occupied by a preamble sequence on the preamble channel in order to adapt the preamble to varying channel conditions.

Szczutkowski in view of Kolze does not expressly disclose that there are a plurality of preamble size detection elements. Mahany teaches, in a system for preamble detection, using multiple parallel detectors in order to quickly detect a particular type of preamble sequence (col. 9, lines 48-54). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a plurality of preamble size detection elements in order to quickly detect a particular type of preamble sequence.

Szczutkowski in view of Kolze in further view of Mahany does not expressly disclose checking the decoded symbols for an identifier and extracting the preamble information from the checked symbol that carries the identifier. Applicant teaches as prior art including a variety of

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fields in a preamble including identifiers (para. 1004). It is implicit that the device will should only act on information that is destined for the device. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to check the decoded symbols for an identifier and to extract the preamble information from the checked symbol that carries the identifier in order to ensure that the device only acts on information destined for the device.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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